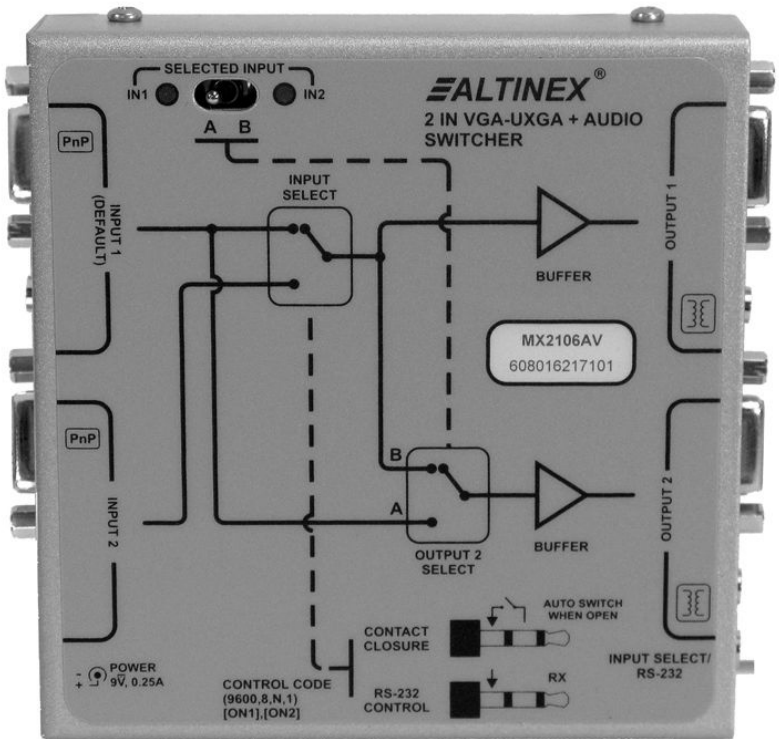

MANUAL PART NUMBER: 400-0365-005

MX2106AV

2-IN 1-OUT VGA AUTO + AUDIO SWITCHER WITH 1x2 DA USER'S GUIDE

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **MX2106AV** Switcher. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **MX2106AV** and to prevent fire and shock hazards. Please read them carefully and heed all warnings.

1.1 GENERAL

- Qualified ALTINEX service personnel or their authorized representatives must perform all service.

1.3 INSTALLATION

- For best results, place the **MX2106AV** on a flat, level surface. Keep in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to water or moisture. Do not place the **MX2106AV** in direct sunlight, near heaters or heat-radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **MX2106AV** carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **MX2106AV**.
- To turn off the main power, be sure to remove the cord from the power outlet. The power outlet should be installed as close to the equipment as possible, and should be easily accessible.
- Do not pull the power cord or any cable that is attached to the **MX2106AV** Switcher.
- If the **MX2106AV** is not used for an extended time, disconnect the power cord from the outlet.

1.4 CLEANING

- Unplug the **MX2106AV** power cord before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.5 FCC NOTICE

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when equipment is operated in a commercial environment. This equipment generates and uses radio frequency energy. If not installed and used in accordance with the instructions found herein, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

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ABOUT YOUR MX2106AV 2

MX2106AV

2-In 1-Out VGA Auto + Audio Switcher with 1x2 DA

The **MX2106AV** switches automatically upon signal detection, but may also be controlled manually if desired. The **MX2106AV** is designed to switch computer video signals and stereo audio.

The unit is encased in a solid metal enclosure and ships with an external, 9V 500mA power adapter.

Override switching is made through the INPUT SELECT/RS-232 input. Manual override switching is made via a contact closure on the INPUT SELECT jack. This switch may be used for manual control, or the contact closure may be controlled from a control system. RS-232 control is accomplished by sending ASCII commands to select either Input 1 or Input 2.

TECHNICAL SPECIFICATIONS 3

Specifications are subject to change.
See www.altinex.com for up-to-date information.

FEATURES/DESCRIPTION	MX2106AV
Inputs	
Video	15-pin HD female (2)
Audio	3.5 mm female (2)
Control	3.5 mm female (1)
Power	2.5 mm jack (1)
Outputs	
Video	15-pin HD female (2)
Audio	3.5 mm female (2)
Compatibility	
Signal Types	RGB, RGsB, RGBS, RGBHV, YPbPr
Video Resolutions	Up to QXGA, Up to 1080p
Audio	Stereo
Accessories Included	
Power Adapter	+9 VDC, 500 mA

Table 1. **MX2106AV** General

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MECHANICAL	MX2106AV
Material	Aluminum
Finish	Silver
Height	1.0 in (25 mm)
Width	4.4 in (112 mm)
Length	4.5 in (114 mm)
Weight	0.8 lb (0.4 kg)
Shipping Weight	1.4 lb (0.6 kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs (min.)

Table 2. **MX2106AV** Mechanical

ELECTRICAL	MX2106AV
Video Input	
Video Signal	1.5 Vp-p max
Video Impedance	75 ohms
SYNC Signal	TTL (+/-)
SYNC Impedance	10 kohms
Audio Input Signal	
Impedance	10 kohms
Level	0 dBU
Video Output Signals	
Video Gain	0 +/- 0.5 dB
Video Impedance	75 ohms
Sync Signal	TTL (+/-)
Coupling	DC
Audio Output Signals	
Impedance	75 ohms
Gain	0 +/- 0.5 dB
Power Consumption	
External Adapter: 9 VDC	250 mA (2.2 W)

Table 3. **MX2106AV** Electrical

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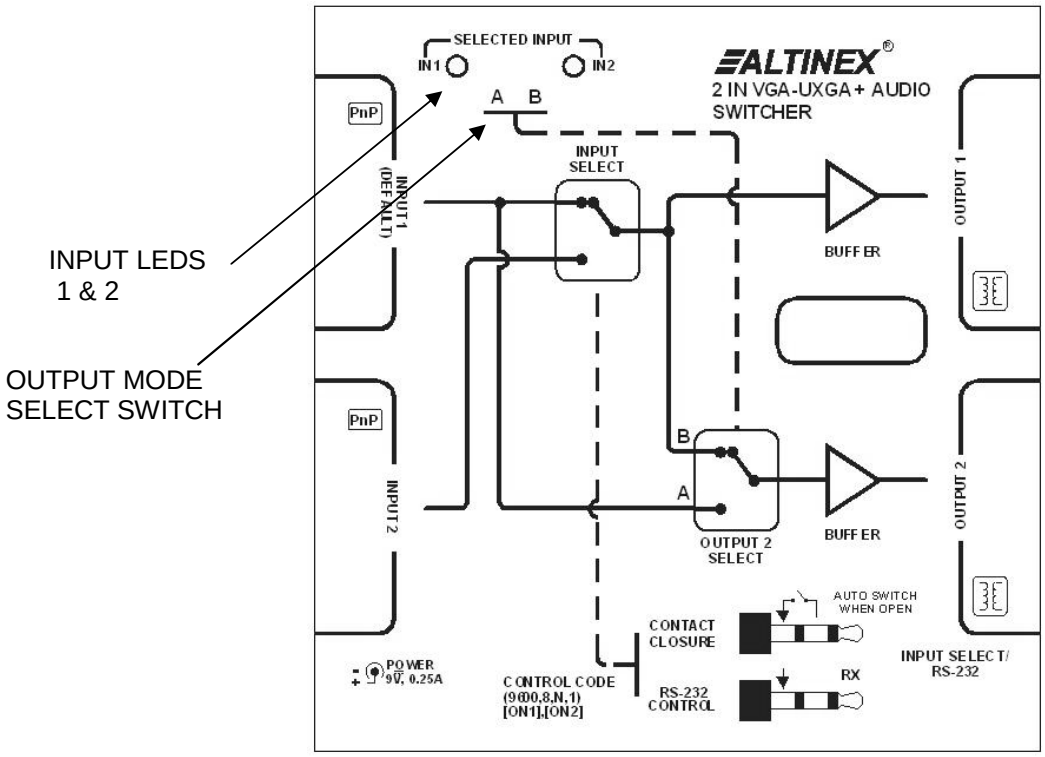
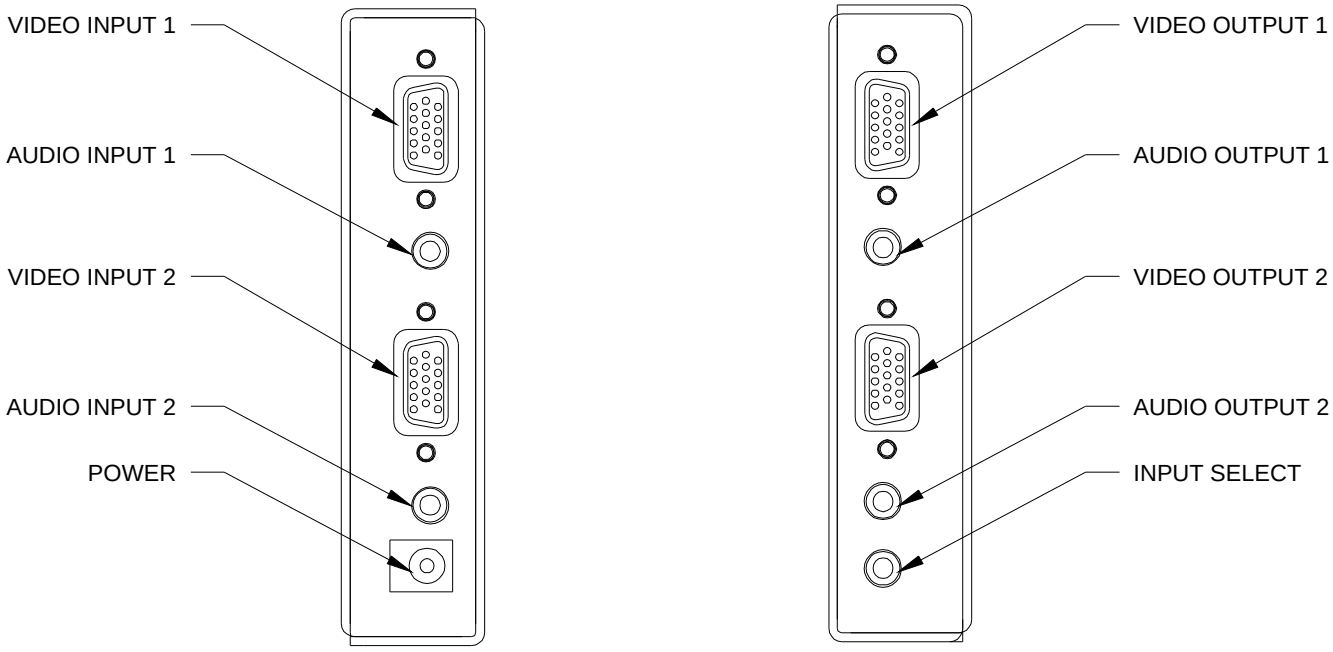
PRODUCT DESCRIPTION 4





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APPLICATION DIAGRAMS 5

DIAGRAM 1: TYPICAL SETUP

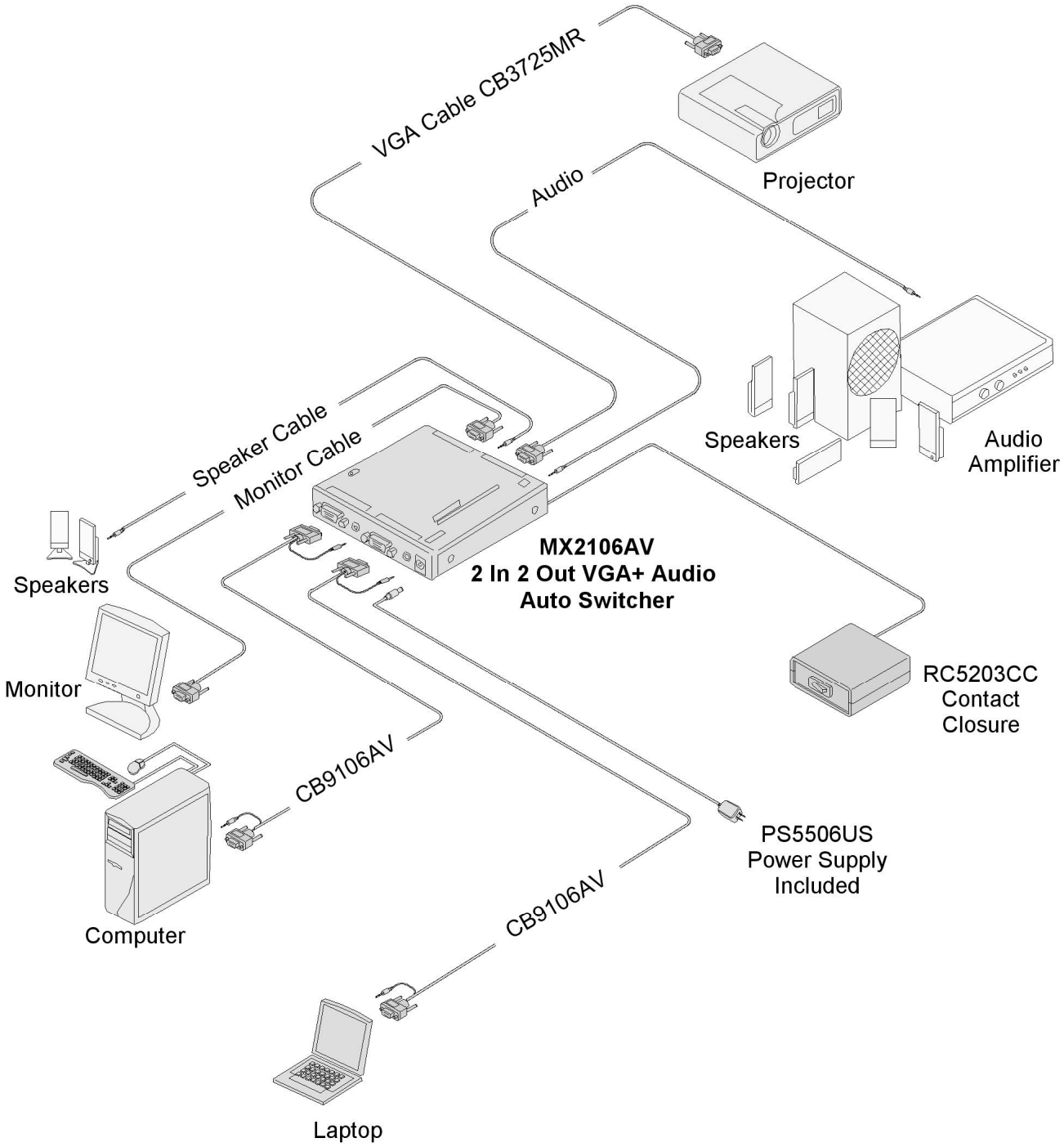

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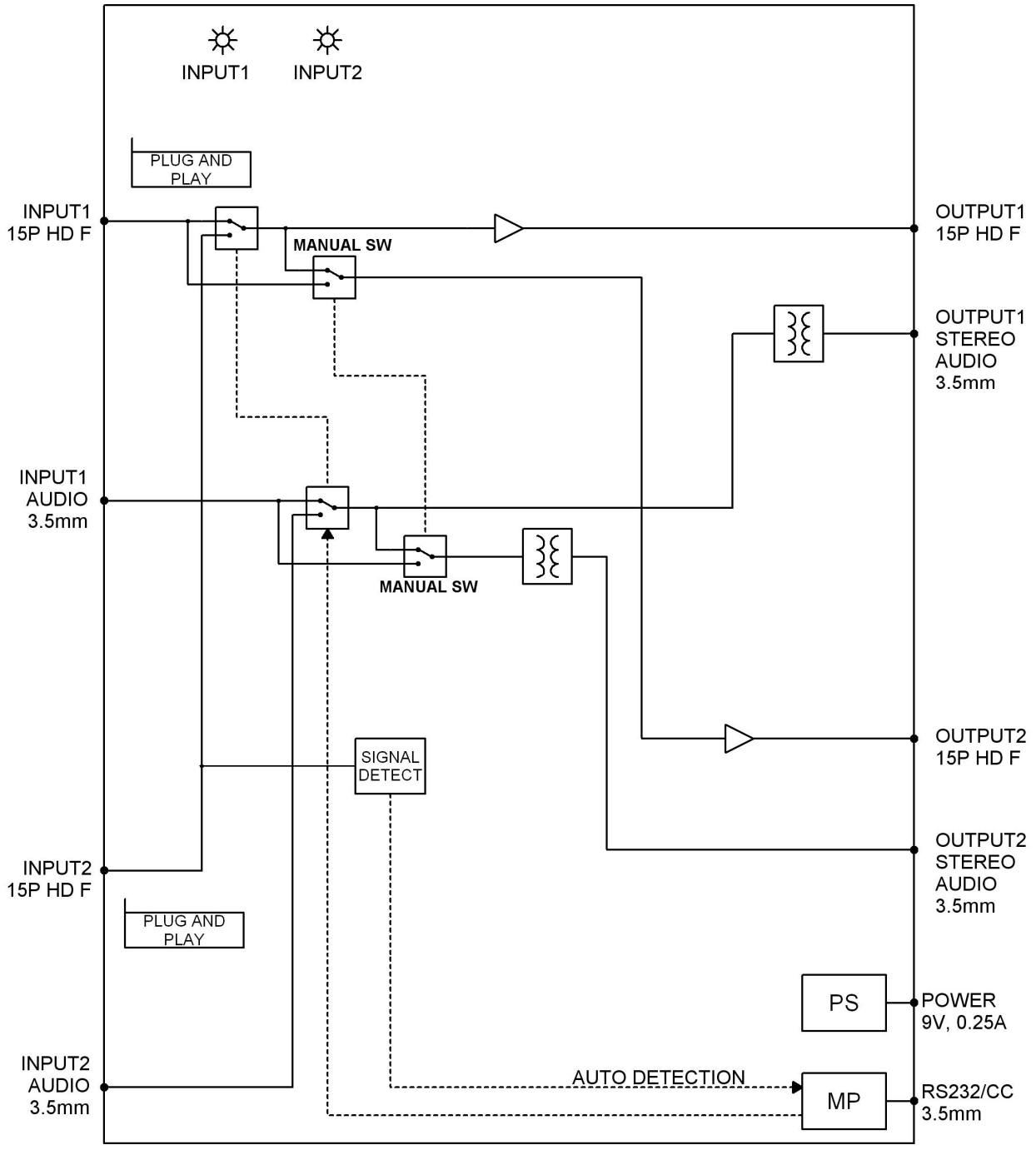
DIAGRAM 2: INTERNAL VIEW



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INSTALLING YOUR MX2106AV 6

Step 1. Make sure that the correct power adapter is used. The ALTINEX power adapter is supplied with the unit. Connect the power adapter to the power port. The IN 1 indicator light should be on and green.

NOTE: Input 1 is the default if there are no signals on the inputs.

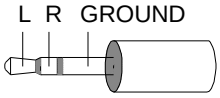
Step 2. Connect the audio/video source or sources to the **MX2106AV** inputs. If there is a properly formatted input signal on Input 2, the switcher will switch to Input 2 automatically.

Step 3. Connect a cable from one or both of the output ports on the **MX2106AV** to display and audio devices.

Step 4. If a remote switch or RS-232 control is to be used, connect the control cable to the INPUT SELECT/RS-232 port. See the next section for specific control functions.

NOTE: See the figure and table below for cabling and communication information.

Step 5. Verify that the picture quality on the display is good. If a signal is not being received, make sure that the display is compatible with the resolution of the computer graphics card.



Standard 3.5mm plug.

CONTROL	L	R	GND
Remote Switch	n/a	Switch Pole	Switch Throw
RS-232* DB9	Pin 3 TX	n/a	Pin 5 GND

* **Port settings for RS-232 communication:**

Baud rate... 9600 Parity.....None
Data bits ..... 8 Flow Control....None
Stop Bits 1

OPERATION 7

The **MX2106AV** will operate successfully as long as cables are attached properly and other specifications are followed. The **MX2106AV** functions as shipped, but additional controls and features are available.

7.1 OUTPUT MODES

The **MX2106AV** has 2 modes of operation for controlling the output; Mode A and Mode B. The mode switch is located on the top of the unit by the input LEDs.

MODE A

The default mode is MODE A. In this mode, the audio and video for whichever input is selected will be present on both Outputs 1 and 2.

MODE B

In Mode B, Output 2 will always display what is on Input 1. If there is no signal on Input 1, there will be no output on Output 2. The image on Output 1 will display whichever input is selected.

7.2 AUTO INPUT SELECT

Auto switching is active when there is no input on the INPUT SELECT/RS-232 jack. In auto, Input 2 is selected if there is a signal present. Input 1 will only be selected if there is no signal on Input 2.

7.3 MANUAL INPUT SELECT

Manual switching is accomplished via a contact closure on the INPUT SELECT/RS-232 jack. Auto switching is disabled in manual mode and switching can be accomplished using a control system or hardware switch.

CLOSED = Input 1 OPEN = Input 2

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7.4 RS-232 INPUT SELECT

The **MX2106AV** can be switched using simple ASCII commands through standard RS-232 communication. Connect the RS-232 cable to the INPUT SELECT/RS-232 jack. In RS-232 Control Mode, Auto switching is disabled. Send one of the following commands to select the desired input.

[ON1] = Input 1 [ON2] = Input 2

NOTE: The "[" and "]" brackets are part of the command and must be included.

7.5 MODE/SWITCHING SUMMARY

Following is a summary of the input select and output modes. In auto switching, the input selected is dependent on the input signals. In manual and RS-232 switching, the input to output connections are fixed depending on the switch position or command sent.

AUTO SWITCHING

	INPUTS	OUT1	OUT2
MODE A	Input 1 & 2	IN2	IN2
	Input 1 only	IN1	IN1
	Input 2 only	IN2	IN2
MODE B	Input 1 & 2	IN2	IN1
	Input 1 only	IN1	IN1
	Input 2 only	IN2	X..

MANUAL/RS-232 SWITCHING

In manual and RS-232 switching, the outputs will always display the inputs shown below. If there is no signal on the input (IN1 or IN2), there will not be an image on the output.

	OUT1	OUT2
MODE A		
OPEN / [ON2]	IN2	IN2
CLOSED / [ON1]	IN1	IN1
MODE B		
OPEN / [ON2]	IN2	IN1
CLOSED / [ON1]	IN1	IN1

7.6 CABLE/ACCESSORIES

Cable accessories for RS-232 control and remote switching are available from ALTINEX.

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TROUBLESHOOTING GUIDE 8

We have carefully tested and have found no problems in the supplied **MX2106AV** unit. However, we would like to offer the following suggestions:

8.1 LEDs ARE OFF

Cause 1: The 9V adapter is installed wrong.

Solution 1: Make sure the adapter output is connected to the POWER input jack on the unit. If one of the LEDs is still not on, see Solution 2.

Solution 2: Ensure the adapter is plugged into an AC outlet that has power. If the adapter has AC power and the LEDs are still off, see Cause 2.

Cause 2: The wrong 9V adapter is installed.

Solution 1: Please use the ALTINEX supplied external adapter (9VDC 500mA). If one of the LEDs is still not on, call ALTINEX at (714) 990-2300.

8.2 UNIT DOES NOT AUTO SWITCH

Cause 1: The manual switch is installed.

Solution: Remove the connection to the INPUT SELECT jack. If a plug is installed in the jack, auto-switching is disabled. If the unit still does not auto-switch, see Cause 2.

Cause 2: The video signal is bad.

Solution 1: Remove the input signals from the switcher. If the IN 1 LED is off, call ALTINEX at (714) 990-2300. If the IN 1 LED is on, see Solution 2.

Solution 2: Connect a properly formatted VGA-type signal to Input 2. If the switcher does not switch to Input 2, see Solution 3.

Solution 3: Bypass the switcher and connect the output of the source directly to the display. If the display is good, then call ALTINEX at (714) 990-2300.

8.3 NO DISPLAY

Cause 1: The source has a problem.

Solution: Check the source and make sure that there is a signal present and all source connections are correct. If the source is working and there is still no display, see Cause 2.

Cause 2: Manual override is on.

Solution: Make sure there is nothing connected to the INPUT SELECT port on the switcher. If there is nothing connected, see Cause 3.

Cause 3: Signal is bad or missing.

Solution 1: Make sure the switcher output is connected to the monitor. If there is still no display, see Solution 2.

Solution 2: Remove both inputs to the switcher and connect the active signal from the source to Input 1. If there is still no display, see Solution 3.

Solution 3: Bypass the switcher and connect the output of the source directly to the monitor. If the display is good, then call ALTINEX at (714) 990-2300. If there is still no display, see Cause 4.

Cause 4: Cable connections are incorrect.

Solution: Make sure the cables are properly connected. Also, make sure that the continuity and wiring are good. If there is still no display present, see Cause 5.

Cause 5: The display has a problem.

Solution: Make sure the display is powered and is turned on. If there is still no display, please call ALTINEX at (714) 990-2300.

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ALTINEX POLICIES 9

9.1 LIMITED WARRANTY/RETURN POLICIES

Please see the ALTINEX website at www.altinex.com for details on warranty and return policies.

9.2 CONTACT INFORMATION

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